BRUHAT BANGALORE MAHANAGARA PALIKE

MEASUREMENT SHEET

RA 1ST AND FINAL BILL

Name of work: Improvement to Roads of Navyanagara in Ward No. 07, Byatarayanapura.

Estimated Cost : Rs. 30.00 Lakhs

Head of Account : P-3333 Special Development Works

Job Code: 007-18-000042

Name of Agency: Executive Engineer, KRIDL

Work order No: BBMP/EE/BTP/WO/07/2017-18 Dated: 02.03.2018.

Measurements Recarded on :

Sl No.	Description	No.	L	B1	B2	AV. B	D	Qty	Rate / Unit	Amount
1	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location and complete as per specifications..								Cum	
	1st Cross UG Dcut Portion	3	30.00			2.00	0.23	41.40		
	Pot Holes	5	3.00			2.50	0.23	8.63		
	1st A Cross UGD Cut Portion	1	20.00			2.50	0.23	11.50		
	1st B Cross Pot Holes	5	2.00			2.00	0.23	4.60		
	1st C Cross Bad Reach	1	6.50			10.00	0.23	14.95		
	2nd Cross UGD Cut Portion	2	30.00			2.50	0.23	34.50		
	3rd Cross Road Cutting	8	5.00			2.00	0.23	18.40		
	Pot Holes	1	25.00			1.50	0.23	8.63		
	4th Cross UGD Road Cut Portion	2	30.00			2.00	0.23	27.60		
	Pot Holes	8	2.00			2.50	0.23	9.20		
	6th Cross UGD Road Cu Portion	1	30.00			2.00	0.23	13.80		
							Total Qty =	**193.20**		
							Qty Limited to =	**191.26**	148.76	**28452.00**
2	Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density complete as per specifications								Cum	
	1st Cross UG Dcut Portion	3	30.00			2.00	0.23	41.40		
	Pot Holes	5	3.00			2.50	0.23	8.63		
	1st A Cross UGD Cut Portion	1	20.00			2.50	0.23	11.50		
	1st B Cross Pot Holes	5	2.00			2.00	0.23	4.60		
	1st C Cross Bad Reach	1	6.50			10.00	0.23	14.95		
	2nd Cross UGD Cut Portion	2	30.00			2.50	0.23	34.50		
	3rd Cross Road Cutting	8	5.00			2.00	0.23	18.40		
	Pot Holes	1	25.00			1.50	0.23	8.63		
	4th Cross UGD Road Cut Portion	2	30.00			2.00	0.23	27.60		
	Pot Holes	8	2.00			2.50	0.23	9.20		
	6th Cross UGD Road Cu Portion	1	30.00			2.00	0.23	13.80		
							Total Qty =	**193.20**		
							Qty Limited to =	**191.26**	1768.08	**338163.00**
3	Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications								Sqm	
	Navynagara 1st Cross	3	30.00			2.00		180.00		
		5	3.00			2.50		37.50		
	1st A Cross	1	20.00			2.50		50.00		
	1st B Cross	5	2.00			2.00		20.00		

Assistant Engineer

Sl No.	Description	No.	L	B1	B2	AV. B	D	Qty	Rate / Unit	Amount
	1st C Cross	1	6.50			10.00		65.00		
	2nd Cross	2	30.00			2.50		150.00		
	3rd Cross	8	5.00			2.00		80.00		
		10	2.50			1.50		37.50		
	4th Cross	2	30.00			2.00		120.00		
		8	2.00			2.50		40.00		
	5th Cross	5	3.00			2.50		37.50		
	6th Cross	1	30.00			2.00		60.00		
							Total Qty =	877.50		
							Qty Limited to =	831.58	27.56	22918.00
4	Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries complete as per specifications								Sqm	
	Navyanagara 1st Cross									
	Ch: 0.00 to 30.00 M	1	30.00	8.40	8.10	8.25		247.50		
	Ch: 30.00 to 60.00 M	1	30.00	6.00	6.20	6.10		183.00		
	Ch: 60.00 to 90.00 M	1	30.00	6.20	5.80	6.00		180.00		
	Ch: 90.00 to 120.00 M	1	30.00	5.80	5.20	5.50		165.00		
	Ch: 120.00 to 150.00 M	1	30.00	5.20	5.60	5.40		162.00		
	Ch: 150.00 to 180.00 M	1	30.00	5.60	5.30	5.45		163.50		
	Ch: 180.00 to 192.00 M	1	12.00	5.30	5.70	5.50		66.00		
	Navyanagara 1st A Cross									
	Ch: 0.00 to 25.00 M	1	25.00	5.10	6.20	5.65		141.25		
	Ch: 26.00 to 30.00 M	1	5.00	6.20	3.70	4.95		24.75		
	Navyanagara 1st B Cross									
	Ch: 0.00 to 27.00 M	1	27.00	5.00	5.80	5.40		145.80		
	Navyanagara 1st C Cross									
	Ch: 0.00 to 30.00 M	1	30.00	6.80	6.50	6.65		199.50		
	Ch: 30.00 to 60.00 M	1	30.00	6.50	5.10	5.80		174.00		
	Ch: 60.00 to 90.00 M	1	30.00	5.10	4.90	5.00		150.00		
	Ch: 90.00 to 120.00 M	1	30.00	4.90	5.20	5.05		151.50		
	Ch: 120.00 to 130.00 M	1	10.00	5.20	5.10	5.15		51.50		
	Navyanagara 2nd Cross									
	Ch: 0.00 to 30.00 M	1	30.00	5.00	4.70	4.85		145.50		
	Ch: 30.00 to 60.00 M	1	30.00	4.70	4.30	4.50		135.00		
	Ch: 60.00 to 90.00 M	1	30.00	4.30	4.90	4.60		138.00		
	Ch: 90.00 to 120.00 M	1	30.00	4.90	5.40	5.15		154.50		
	Ch: 120.00 to 150.00 M	1	30.00	5.40	4.60	5.00		150.00		
	Ch: 150.00 to 170.00 M	1	20.00	4.60	5.20	4.90		98.00		
	Navyanagara 2nd A Cross									
	Ch: 0.00 to 24.00 M	1	24.00	6.20	6.50	6.35		152.40		
	Navyanagara 3rd Cross									
	Ch: 0.00 to 30.00 M	1	30.00	5.10	5.30	5.20		156.00		
	Ch: 30.00 to 60.00 M	1	30.00	5.30	6.00	5.65		169.50		
	Ch: 60.00 to 90.00 M	1	30.00	6.00	5.20	5.60		168.00		
	Ch: 90.00 to 120.00 M	1	30.00	5.20	5.80	5.50		165.00		
	Ch: 120.00 to 150.00 M	1	30.00	5.80	5.40	5.60		168.00		
	Ch: 150.00 to 180.00 M	1	30.00	5.40	5.80	5.60		168.00		
	Ch: 180.00 to 185.00 M	1	5.00	5.80	9.70	7.75		38.75		
	Navyanagara 3rd A Cross									
	Ch: 0.00 to 25.00 M	1	25.00	6.60	6.80	6.70		167.50		
	Navyanagara 4th Cross									
	Ch: 0.00 to 6.00 M	1	6.00	7.50	4.70	6.10		36.60		
	Ch: 7.00 to 30.00 M	1	24.00	4.70	5.30	5.00		120.00		
	Ch: 30.00 to 60.00 M	1	30.00	5.30	4.70	5.00		150.00		
	Ch: 60.00 to 90.00 M	1	30.00	4.70	5.30	5.00		150.00		
	Ch: 90.00 to 120.00 M	1	30.00	5.30	4.70	5.00		150.00		
	Ch: 120.00 to 150.00 M	1	30.00	4.70	4.80	4.75		142.50		
	Ch: 150.00 to 180.00 M	1	30.00	4.80	5.60	5.20		156.00		
	Navyanagara 5th Cross									
	Ch: 0.00 to 30.00 M	1	30.00	7.50	5.50	6.50		195.00		
	Ch: 30.00 to 60.00 M	1	30.00	5.50	6.50	6.00		180.00		

Assistant Engineer

Sl No.	Description	No.	L	B1	B2	AV. B	D	Qty	Rate / Unit	Amount
	Ch: 60.00 to 90.00 M	1	30.00	6.50	5.20	5.85		175.50		
	Ch: 90.00 to 120.00 M	1	30.00	5.20	5.50	5.35		160.50		
	Ch: 120.00 to 150.00 M	1	30.00	5.50	5.20	5.35		160.50		
	Ch: 150.00 to 160.00 M	1	10.00	5.20	4.90	5.05		50.50		
	Navyanagara 6th Cross									
	Ch: 0.00 to 30.00 M	1	30.00	5.20	5.20	5.20		156.00		
	Ch: 30.00 to 60.00 M	1	30.00	5.20	5.40	5.30		159.00		
	Ch: 60.00 to 90.00 M	1	30.00	5.40	5.60	5.50		165.00		
	Navyanagara Cross Road									
	Ch: 0.00 to 30.00 M	1	30.00	5.00	5.00	5.00		150.00		
	Ch: 30.00 to 60.00 M	1	30.00	5.00	5.00	5.00		150.00		
	Ch: 60.00 to 90.00 M	1	30.00	5.00	5.00	5.00		150.00		
	Ch: 90.00 to 118.10 M	1	28.10	5.00	5.00	5.00		140.50		
							Total Qty =	**7277.05**	3.18	**23141.00**
5	Providing and applying tack coat using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries etc complete as per specifications.								Sqm	
		Qty Vide Item No. 04						7277.05		
							Total Qty =	**7277.05**	11.66	**84850.00**
6	Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 100/120 TPH capacity H.M.P. with sensor paver Gr-II (30 mm to 45 mm) with 6 % VG-30 Bitumen etc complete as per specifications.								Cum	
	Navyanagara 1st Cross					Av. B				
	Ch: 0.00 to 30.00 M	1	30.00			8.20	0.04	9.84		
	Ch: 30.00 to 60.00 M	1	30.00			6.20	0.04	7.44		
	Ch: 60.00 to 90.00 M	1	30.00			6.20	0.04	7.44		
	Ch: 90.00 to 120.00 M	1	30.00			5.70	0.04	6.84		
	Ch: 120.00 to 150.00 M	1	30.00			5.50	0.04	6.60		
	Ch: 150.00 to 180.00 M	1	30.00			6.00	0.04	7.20		
	Ch: 180.00 to 192.00 M	1	12.00			5.60	0.04	2.69		
	Navyanagara 1st A Cross									
	Ch: 0.00 to 25.00 M	1	25.00			5.65	0.04	5.65		
	Ch: 26.00 to 30.00 M	1	5.00			4.95	0.04	0.99		
	Navyanagara 1st B Cross									
	Ch: 0.00 to 27.00 M	1	27.00			5.40	0.04	5.83		
	Navyanagara 1st C Cross									
	Ch: 0.00 to 30.00 M	1	30.00			6.65	0.04	7.98		
	Ch: 30.00 to 60.00 M	1	30.00			5.80	0.04	6.96		
	Ch: 60.00 to 90.00 M	1	30.00			4.90	0.04	5.88		
	Ch: 90.00 to 120.00 M	1	30.00			4.95	0.04	5.94		
	Ch: 120.00 to 130.00 M	1	10.00			5.15	0.04	2.06		
	Navyanagara 2nd Cross									
	Ch: 0.00 to 30.00 M	1	30.00			4.85	0.04	5.82		
	Ch: 30.00 to 60.00 M	1	30.00			4.50	0.04	5.40		
	Ch: 60.00 to 90.00 M	1	30.00			4.60	0.04	5.52		
	Ch: 90.00 to 120.00 M	1	30.00			5.15	0.04	6.18		
	Ch: 120.00 to 150.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 150.00 to 170.00 M	1	20.00			4.90	0.04	3.92		
	Navyanagara 2nd A Cross									
	Ch: 0.00 to 24.00 M	1	24.00			6.35	0.04	6.10		
	Navyanagara 3rd Cross									
	Ch: 0.00 to 30.00 M	1	30.00			5.20	0.04	6.24		
	Ch: 30.00 to 60.00 M	1	30.00			5.70	0.04	6.84		
	Ch: 60.00 to 90.00 M	1	30.00			5.60	0.04	6.72		
	Ch: 90.00 to 120.00 M	1	30.00			5.50	0.04	6.60		
	Ch: 120.00 to 150.00 M	1	30.00			5.60	0.04	6.72		
	Ch: 150.00 to 180.00 M	1	30.00			5.50	0.04	6.60		

Assistant Engineer

Assistant Engineer 13/9/18 Kodigehalli Sub Division Bruhat Bangalore Mahanagara Palike Bangalore - 560 092

Sl No.	Description	No.	L	B1	B2	AV. B	D	Qty	Rate / Unit	Amount
	Ch: 180.00 to 185.00 M	1	5.00			7.80	0.04	1.56		
	Navyanagara 3rd A Cross									
	Ch: 0.00 to 25.00 M	1	25.00			6.70	0.04	6.70		
	Navyanagara 4th Cross									
	Ch: 0.00 to 6.00 M	1	6.00			6.20	0.04	1.49		
	Ch: 7.00 to 30.00 M	1	24.00			5.00	0.04	4.80		
	Ch: 30.00 to 60.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 60.00 to 90.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 90.00 to 120.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 120.00 to 150.00 M	1	30.00			4.75	0.04	5.70		
	Ch: 150.00 to 180.00 M	1	30.00			5.20	0.04	6.24		
	Navyanagara 5th Cross									
	Ch: 0.00 to 30.00 M	1	30.00			6.50	0.04	7.80		
	Ch: 30.00 to 60.00 M	1	30.00			6.00	0.04	7.20		
	Ch: 60.00 to 90.00 M	1	30.00			5.85	0.04	7.02		
	Ch: 90.00 to 120.00 M	1	30.00			5.30	0.04	6.36		
	Ch: 120.00 to 150.00 M	1	30.00			5.30	0.04	6.36		
	Ch: 150.00 to 160.00 M	1	10.00			5.00	0.04	2.00		
	Navyanagara 6th Cross									
	Ch: 0.00 to 30.00 M	1	30.00			5.20	0.04	6.24		
	Ch: 30.00 to 60.00 M	1	30.00			5.30	0.04	6.36		
	Ch: 60.00 to 90.00 M	1	30.00			5.50	0.04	6.60		
	Navyanagara Cross Road									
	Ch: 0.00 to 30.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 30.00 to 60.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 60.00 to 92.00 M	1	30.00			5.00	0.04	6.00		
	Ch: 90.00 to 107.65 M	1	17.65			5.00	0.04	3.53		
							Total Qty =	289.95	7083.98	2054028.00
7	Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Bituminous Surface:- Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications								Sqm	
	Navyanagara 1st Cross	2	535.00			0.15		160.50		
		89	3.00			0.15		40.05		
		1	32.00			0.10		3.20		
		1	5.00			0.10		0.50		
		1	4.00			0.10		0.40		
		1	22.00			0.10		2.20		
		1	28.00			0.10		2.80		
		1	10.00			0.10		1.00		
		1	4.00			0.10		0.40		
		1	31.00			0.10		3.10		
		1	30.00			0.10		3.00		
		1	27.00			0.10		2.70		
		2	160.00			0.10		32.00		
		1	15.00			0.10		1.50		
		2	35.15			0.10		7.03		
							Total Qty =	260.38	542.72	141313.00
	Sub Total									2692865.00
	Add 10% KRIDL Charges									269287.00
	Add 1% Labour Cess Charges									26929.00
									Total	2989081.00

Rupees Twenty Nine Lakh(s) Eighty Nine Thousand Eighty One Only

Assistant Engineer
Ward No. 07

Assistant Executive Engineer
Kodigehalli Sub Division
Bruhat Bangalore Mahanagara Palike
Bangalore - 560 092

Assistant Engineer